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VOL. XXIX

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No. 2.



ISN'T THAT a foul proceeding for Fowls to go fowling after such fowls as owls and Millers the way he does on page 13?

CLARIFYING extracted honey is urged in *Deutsche Bienenzucht*. Heat slowly to not more than 145°, so as to melt all the granules; then let cool slowly; the more slowly, the brighter the honey. Some people will say slow cooling makes no difference, but I'm only giving it as I find it.

THE UNCAPPING-FORK continues to be vaunted in the German bee-journals as superior to an uncapping-knife. Has any one tried it in this country, or does it work well only in the German language? it is now made with adjustable forks or needles, so that, if one is broken, it may be replaced. Price, with 4 extra needles, 33 cts.

MORE PROGRESS in bee culture has been made in the past 60 years than in the entire previous history of the world. In 1842 appeared the Dzierzon theory; in 1851 Langstroth gave us movable combs; in 1857 Johann Mehring comb foundation; in 1865 Hruschka the honey-extractor; Hannemann the queen-excluder, when? Then there's the smoker, sections, etc.; when and by whom were they? It's well for us at the beginning of the new century to make an inventory of our blessings, and to be thankful for them.

DOOLITTLE is reported in *Deutsche Bienenzucht* as distinguishing between drone cells and store-cells (unterscheidet geradezu Drohnenzellen und Vorratzszellen). In proof of this he is quoted as saying (GLEANINGS, p. 438) that store-cells "den Drohnenzellen an Grösse gleichen" (resemble drone-cells in size). Doolittle's exact words were, "store comb, which is of the drone size of cell." I hardly think he meant to teach that a drone-cell differs from a store-cell except as to its use. [This is a good example, showing how American ideas are sometimes perverted simply because the language is misunderstood.—ED.]

SWEET CLOVER in Ireland is reported as growing 5 ft. high, p. 9. Now some one report what it can do in this country, say out west, where it isn't thickly settled, and where it has room to grow. [Sweet clover grows right here in Medina, along the sides of the roads, a great deal more than 5 feet high. I have not measured it, but I am sure I have seen it along the road for a quarter of a mile a great deal higher than I could possibly reach.—A. I. R.]

C. A. GREEN, editor of *Green's Fruit-Grower*, says: "But as regards bees injuring fruit, there is no doubt in my mind that this is a fallacy which should be corrected by the agricultural and horticultural press throughout the country. Make it plain to all inquirers that bees do not injure fruit, but that they are the friends of fruit-growers." [This is most important testimony, coming as it does from a representative of the fruit-growing interest. When we get right down to it there is no real antagonism between the two interests, fruit and bees.—ED.]

IF I UNDERSTAND rightly, Doolittle advises, p. 16, to extract partly filled sections, and use them for bait without having the bees clean them out. Now, will there not be particles of candied honey in those sections? and will that not hasten candying in them when filled? [It does not seem to me that Mr. Doolittle really meant this; for among practical bee-keepers it has always been laid down as a rule that unfinished sections, when extracted, should be cleaned out by the bees, else there will be particles of candied honey in the sections when they are filled the second time.—ED.]

ACCORDING to the report in *American Bee Journal*, all but one member of the National convention voted in favor of the reform spelling used in that paper. Now, was that an "unbiased" vote, or were all those sensible people hoodooed by that man York? [If I remember correctly there was a large number who did not vote on either side. If there was any "hoodooing" it was by that man Mason. But, nevertheless, I believe in short spelling, but do not see how it is practicable to carry it into effect at the present time in our own establishment.—ED.]

BRO. A. I., you speak of a young man "picking out a girl just because of her good looks," p. 24. Well, now, that isn't as bad as it might be; for when a fellow's over head and ears in love with a girl she's the best-looking girl in the world to him, no matter how homely others may think her. Don't you remember? I do. [Yes, doctor, I *do* remember. The girl I am thinking about was "all the world to me," and for that matter she is yet—or at least I tell her so almost every day.—A. I. R.]

THAT UTTER-UTTER decision is alone worth more than all the money that has been put into the N. B. K. A. treasury. So was the adulteration fight in Chicago. Now, my friends, who are not yet members, don't you think you can afford to put in a dollar each to help on the good work? A lot more good can be done by the Association if it has a full treasury. I just suggest it to you. [In my humble judgment the decision of the Utter trial was worth more—vastly more—than that of the celebrated Arkadelphia case, important as that was. If the decision in the first named had been against us, and left there, bee-keeping might have been wiped out of many fruit sections of the United States. The Arkadelphia case related only to bees in towns and villages; and if that had gone against us it would have wiped bee-keeping out of the great centers of population only, but would not have affected it in the least in the great areas of country half a mile and more from those centers. Why, it seems to me that the results of the Utter trial are worth thousands and thousands of dollars. If the National Bee-keepers' Union, the United States Bee-keepers' Union, or the North American Bee-keepers' Association, now all merged into one, had never done any more, we could still feel that the money that has been put into the several treasuries was well invested.—ED]

FRESH WARNING is given in the *British Bee Journal* against the use of beet sugar made in imitation of Demerara cane sugar. A London daily has an article on "Beet Sugar and Arsenic," in which it is said that "in course of manufacture of the white granulated grades of sugar, considerable quantities of sulphuric acid are used" to clean the vacuum-pans, "wash" the sugar white, and give it the proper "bloom." The *British Bee Journal* has steadily insisted that beet sugar is bad for bees. A large part of granulated sugar in this country is from beets. Can our experiment stations tell us about its purity? also its wholesomeness for bees? [In our recent convention at Traverse City, Mich., Prof. Rankin, of the Michigan Agricultural College, emphasized very particularly the fact that sugar from beets is exactly the same thing as sugar from cane, and no chemist can tell a particle of difference. He said the idea that beet sugar was not as good for bees as cane sugar is all foolishness. You may be aware that I have taken the same ground for years. Our sugar-makers, with their great costly plants, and wonderful skill that has come through ages of experience, manufacture sugar that is

almost absolutely chemically pure, no matter what they make it of. Prof. Rankin said that the greater part of the sugar now in the markets of the world is made from beets.—A. I. R.]

GOOD THING that Rambler champions amateur bee-keepers, p. 10. An amateur may or may not be a novice. He generally knows less than the professional, but he may know more. We owe a big debt to amateurs. But I protest against Rambler's classing among amateur bee-keepers a man who doesn't keep bees at all. Still worse: how could you, Rambler, say "of course" A. I. Root is an amateur bee-keeper when he turns over his bees to others and goes off after greenhouses and gardening? He *was* an amateur, a fact greatly to the profit of bee-keeping, and at present you may put him into almost any class of bee-keepers you like, but not among amateurs. He is an amateur florist, an amateur gardener, just now an amateur poultry-raiser, and I don't know what next; and when A. I. is an amateur in any thing he is an amateur of the most pronounced type. [Now look here, doctor; I appeal to the good people of that convention at Traverse City whether I did not rank fairly with the best scientific bee-keepers of the age—at least when I attended that convention. Why, several times I was rated as the great "poo-bah" in bee culture—yes, and not only in Michigan but in York State too.—A. I. R.]

A. J. FISHER sends a tough conundrum. With old comb $1\frac{1}{8}$ thick, and $\frac{1}{8}$ added for cappings, spaced $1\frac{3}{8}$, there is only $\frac{3}{8}$ between combs; then he flings this at me: "If you began anew, would you space $1\frac{3}{8}$ or $1\frac{1}{2}$?" I don't know, but I think not. I'd space $1\frac{7}{8}$, unless swayed from it by its being too much out of fashion. It does seem that $1\frac{1}{2}$ ought to give a better chance for proper clustering in winter. [Now look here, doctor; why do you back down, for you have formerly believed that $1\frac{3}{8}$ was the right spacing? Don't you remember that, out of 49 measurements of comb naturally built in straw hives, Weyprecht found that the distance was $1\frac{3}{8}$ from center to center? and that Berlepsch, in 49 measurements, verified this result? Old comb $1\frac{1}{8}$ thick must be 25 years old; and we may safely say there is not more than one comb in ten thousand—no, nor in five hundred thousand—that will be that old. Then, again, Mr. Fisher is assuming that $\frac{3}{8}$ is too small a space for bees between combs. There are some who believe that $\frac{3}{8}$ is the right bee-space, and we certainly know that that spacing is by no means impracticable. No, sir, 'e, doctor; don't you countenance wider than $1\frac{3}{8}$. If anything, make it a shade less. And don't you know, too, that if the frames are $1\frac{3}{8}$ wide, propolis will increase the spacing? The older the comb, or the older the frame, the wider will be the spacing. Leaving theory entirely out of the account, practical experience in hundreds of thousands of self-spacing frames has shown that $1\frac{3}{8}$ is not too narrow. And one more fact: Narrow spacing has a tendency to keep out drone comb and drone-rearing.—ED.]



Again the weather is as mild
As balmy April's breath;
The sun shines down on pleasant fields
Scarce touched by winter's death.

AMERICAN BEE JOURNAL.

The chief feature of interest in the issue for Jan. 3 is Mr. Dadant's review of the international bee keepers' congress in Paris last September. Although the congress was interesting, Mr. D. thinks more beneficial results have been achieved in national meetings in this country. There were 15 different nations represented, 24 foreign associations, and 35 French. The various representatives understood French except two or three; but the different topics were placed in the hands of committees with foreign chairmen to control the discussions. Mr. Dadant says that, although these men who occupied the chair in turn were very familiar with French, they still showed in their speech that it was a tongue foreign to them. At the door Mr. Dadant was required to register his name, and show his credentials before entering. This was the only method that could be used to compel members to help sustain the institution by paying a membership fee. Otherwise, they said, a number of people, who could enjoy the meetings, would come and listen, and even discuss and vote, and would go home without having subscribed a cent toward defraying expenses. Mr. Dadant says he has heard it deplored that there are bee-keepers at each convention in this country who take advantage of the meetings without helping in a pecuniary way. There were about 150 delegates present, and Mr. Dadant says he was impressed by the great number of doctors, teachers, and clergymen whom he met. The clergy are distinguished there by their clothing. He says he never met a pleasanter set of men than the clergy. It was the opinion of the majority that the destruction of drone comb, and replacing it by worker comb, was desirable, and a motion to recommend it was passed. This was opposed by one man who said he weighed 5 hives with many drones, and 5 hives with few drones. The 5 with many drones increased 116 kilograms, and the 5 with few drones increased 123 kilograms. This shows a difference of 16½ lbs. in favor of few drones. Mr. Dadant comments:

The gentleman did not think that this difference is sufficient to condemn the drones, and thinks they are advantageous in keeping the brood warm. He did not stop to note that, before these drones could keep the other brood warm, they had to be kept warm themselves while in brood, and that, too, at a time when the bees are not numerous, and the weather is cooler than during the honey crop; and that if there had been workers reared instead of drones they would be just as likely to be able to keep the brood warm if the weather became cold enough to necessitate this.

It was asserted by some that bees change worker comb to drone comb when all the

drone comb has been removed, but Mr. Dadant entirely disbelieves this. He attributes the apparent change, not to the bees, but the sagging of the cells in combs of foundation, caused by heat. He says he has seen this in a few instances.

Foul brood was discussed. Mr. Dadant says he thinks that in Europe as well as in America many so-called cases of foul brood are only chilled brood. One French bee-keeper told him that he had had foul brood, but it disappeared without his doing anything with it. One speaker asserted that foul brood is not so bad a disease as reported, and one man ridiculed all the writers who advise such strong measures against it; but the interruptions and laughing of the majority showed him that he had no hope of convincing them. Several leading men, on the other hand, recommended fire and boiling water as the only sure remedies for this dreadful scourge.

In coming home, to pass away idle hours the passengers got up an evening entertainment at which each one was required to say or sing something for the entertainment of the others, under the payment of \$1.00 into the sailors' orphans' fund, and they had Mr. Dadant down on the program for a talk on bees. The few words he spoke led to more questions than he could have answered in a week, and some of them were decidedly foolish. This is mentioned as showing the general ignorance among the masses on the subject of bees.

A fine view of the president of the congress, Mr. Gaston Bonnier, is given. I have long felt interested in the work of this man, and it may not be beyond the bounds of possibility to give a short sketch of him, together with his portrait, in these columns.

An interesting letter appears from Mr. J. T. Hammersmark, written at Reno, Nevada. That State figures but little in print so far as bees are concerned. It is the State of great extremes in some respects. It has an area of 110,700 square miles (more than twice that of Illinois), with a population of only 42,000, or the thirty sixth part of that of Chicago alone. The chief crop for honey there is alfalfa, as we all know. One is always sure of a crop, although it may not be more than 40 or 50 lbs. per colony. The writer says the average crop for 20 years would not be less than 100 lbs. per colony. He says some have asked him whether alfalfa honey is of good flavor. He replies that alfalfa honey of that region is preferred to that of California by buyers. In his estimation it comes next to pure white-clover honey. We have had a great deal of Nevada honey here at the Home of the Honey-bees, and have so far placed it at the head of every thing else in the honey line. If it could not be had for less, the writer would call it cheap at 40 cts. a pound for extracted, and will willingly pay that. We are not aware, however, of any difference in the same kind of honey, whether raised in Colorado, Nevada, or California. One of the drawbacks suffered by the people of Nevada is thus described by Mr. Hammersmark:

Think of a ride on the cars from Chicago, for instance, from three to four days, first through our fertile neighboring States, then over the vast desert of waste land and mountains of the far West. However, this would not be so bad if the railroad company did not charge you a small fortune to get there. Then our freight charges are something awful. Suppose I order a carload of bee-fixtures from the East to be laid down in Reno, Nevada. My goods go no further than Reno, but the company charges me with freight to San Francisco, and then back freight again to Reno. Of course, they are the big fish and I am of the little fish, and during the present state of political corruption, and as long as the men who make our laws can be bought and bribed to do as the big fish dictate, regardless of the rights of the people, the little fish must either submit to their robbery and be swallowed alive, or keep out of their way. There are hopes, however, that such things will some day be modified, for the people will not always be silent.

Comment is needless.

The writer says alfalfa is cut there in its best bloom for honey. The past season the bees did not work more than seven or eight days on each crop before it was cut. It is of the sweet-clover order. It commences to bloom about July 1, and will bloom for ten weeks or more if not cut. "What a lot of sweet could be produced from 1000 acres of alfalfa raised for seed!" Mr. York gives his readers a fine picture of Mr. Hammersmark and his little son, one of the finest-looking boys I ever saw.



CO-OPERATIVE ORGANIZED WORK.

Its Benefits Demonstrated; Conditions Demand Co-operation; the Colorado Honey-producers' Association; an Information Scheme.

BY R. C. AIKIN.

It is now time that we begin to think about what we are to do in the way of perfecting the organizing of bee-keepers. We need to co-operate in a way (or ways) not yet touched. I propose here to follow out more in detail the lines touched upon in my essay before the National Association at Chicago in August last.

I will again refer to the matter of marketing small fruits as practiced here at Loveland. I have before mentioned the matter, but we have since passed through another fruit season, and the results growing out of the system we practice are a good illustration of some of the points I wish to get before the bee-keeping public.

Before the fruit-growers organized, every man shipped for himself or sold to the local stores, and they each shipped separately. There was no system. I did not know what my neighbor was doing, nor he of me. We were just as likely to ship all the same day to the same town and same firm. You see one

house might be badly overloaded, and another house or market have none. Such things result in a glut, demoralized prices, and spoiled berries. Somebody loses heavily, dealers are disgusted, hard feelings are engendered, and it is unsatisfactory all around.

Besides other difficulties, the individual growers were not all posted as to reliable firms, or the methods of doing business, the needs of this and that about putting up the fruit, what trains best to ship on, etc. As a result, there were rascally firms that never paid, things were going wrong here and there, and very many discouragements.

The people organized, and a buying and selling agent was employed. The people report to the agent the prospective need of boxes and crates, and these are ordered in car lots, all being regular, and a good supply on hand. The growers produce the berries, and deliver them at certain hours at the depot, each grower's number on the crates, and there the grower's trouble ends. The agent takes the fruit; ships, collects, and pays over the money when the returns are in. The agent begins to hunt up and book his customers before the fruit comes on, so that, when it does begin to come, he knows just where to place it. He keeps in touch, daily, with all the consuming territory—mail, telephone, and telegraph keep him posted as to supply and demand in the various markets, so that there is an equal distribution.

He also has the commercial rating of the houses, besides knowing personally very many of them and what to expect of them. All this brings the business to a system, and there is economy in distribution, in collecting; in every way the business is more satisfactory. The poor widow with her few rows of berries and half a dozen crates to market, gets her product sold just as quickly, just as safely, and at the same expense or commission, as the wealthiest grower in the whole country. I produce some fruit; and were I obliged to market for myself I should have to quit the fruit, for I can not leave my bee and honey work to putter with a few crates of berries; but by the aid of the association system my berries are put into the agent's hands, and I have no more bother but to draw my pay by and by.

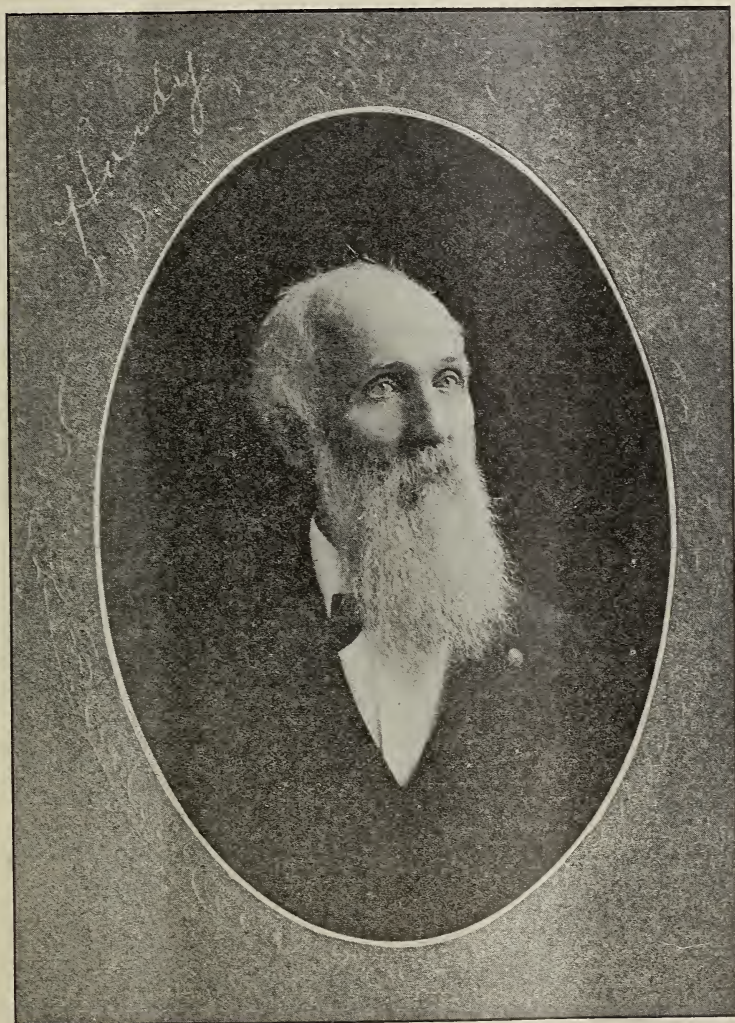
As I have repeatedly said in print, and by word of mouth, our commercial systems *demand and must have* co-operation. Sending our products so far and into the hands of perfect strangers, trusting strangers to get the goods transported, etc., all demand that we get all done by co-operation and a *complete system*. A little community doing business by itself, and having no dealings with the outside world, has little or no need of all this organizing; but the more far-reaching, the more we need organized effort. Do not get scared at the thought of organizing, and cry "trust." There are right and wrong motives. A robbing trust is the rascal's machinery; but a trust to facilitate and improve our methods is a grand and a good thing—our weapon of defense against robbers, and a mutual help and protection. The Loveland Fruit-growers' Association is no robber's scheme. Without

this combine, many who now market fruit with profit would be out of the business, and many who now have fruit to eat would not have it.

Now let us apply the ideas to honey-producers. An apiarian organization must necessarily be much more extensive and far reaching, because our products are from widely distributed territory, and are sent over great dis-

ter should be by and with the others. When a few of us in a county or State have, by hard study and work, wrought out a good thing, why not all fall in and use the results of this knowledge and experience, instead of groping along over the same ground?

We have in Colorado a marketing association known as "The Colorado Honey-producers' Association." This is a corporation



O. O. POPPLETON.—SEE EDITORIALS.

tances. A big crop of honey in the Atlantic and Pacific States means competition to the interior, and *vice versa*. Loveland small fruits seldom go out of the State; but my honey may go to Boston. A county organization is a good thing; a State is better; but a national co-operation is *by far* better than either. The former *can* operate separately, but the lat-

doing business under the laws of our State. The statutes provide that any organization or association doing business *for profit* must *incorporate*. Of course, we expected to do business for profit, so we incorporated.

Right here I want to protest against a common idea that seems to be in the minds of many—that we should not organize for profit,

but that we should simply co-operate for mutual benefit, without salary or any such thing as pay. Let all such know that it is possible for a few people to perform "a labor of love" to aid their brethren; but to keep it up very long will wear out both the patience and pocketbook of the laborer. The Bible teaches us that, in the matter of moral and spiritual things, "the laborer is worthy of his hire," and never once hints that service should not receive compensation, though we are led to the thought that a labor of love and good will receive its reward—if not in this world, in the one to come. It is Bible teaching, and, as well, a *common duty*, that we recompense our brother for service rendered. The gist of this is, let *business* enter into all organization and co-operation.

Our Honey-producers' Association is a business concern on business principles. The object is to co-operate to the business advantage of those concerned. Those concerned are all the honey producers of the State. True, not all of our producers are members of the company, but they may and should be. Those who are outside the company, and even those who are *working against* it, receive benefit because of it. Remember what I have told you about our Loveland Fruit-growers' Association, and the benefits growing out of it, as compared with the demoralized condition before organizing. The Colorado Honey-producers' Association, imperfect and incomplete as it is, and hampered and injured in its work by jealous and suspicious persons who ought to be lending a helping hand, makes it possible to market more systematically and thoroughly our product, and both directly and indirectly benefit the State's producers.

The company business manager is in touch with nearly all the producers in the State, and with *every producing part of the State*. If there is a crop in one valley and none in some other, our manager knows somewhat of it. If honey is wanted, he knows where it is. He makes it *his business* to know, as far as possible, the crop prospects in the whole United States, and all this information he applies to the protection and benefit of the industry in the State, and in particular to those who support him by moral and financial help. It takes thought and energy, time and money, to do this work; but in the end it pays the producer and works him no hardship.

We will admit that our organization has reduced the profits, probably, of a few middlemen (I am not objecting to a middleman, he is a *necessity* in our business); but it has very much benefited the *producers*. One thing is *absolutely fundamental and necessary to the welfare and upbuilding of the nation and its business*: it is, the *prosperity of the producers*. I wish these ideas could be in bold relief, in letters of blood before our politicians and rulers and law makers, till they would never forget them. Break down the producer, and you destroy our prosperity, *middlemen and all*; build up the producer, and you unavoidably build up the dependencies.

I will, in my next, enter into the plans I have in mind for organizing the bee-keepers

all over our nation into a co-operative business concern. That we should do this I have not the least doubt. Economy and justice demand it. Duty to ourselves and others makes it a necessity. We shall have neglected a very important duty if we leave this work undone.

Before closing I want to call attention to a work done this summer and fall by our Mr. F. L. Thompson. It illustrates somewhat the benefits of organization and co-operation, is the beginning (and only a beginning) of what should be carried out all over our land. Mr. Thompson's work was this:

He conceived the idea of getting reports from producers all over the State, as to amount of old honey carried over from last year, together with prices it was selling at; how the bees wintered, and prospects for a crop, both as to condition of bees and other features; from time to time the progress of the flow, the harvesting of crop, prices crop was held at, and when sales made, price obtained, etc. From reports sent to him, Mr. T. compiled results, and mailed the same to the reporters in the various locations. It is too soon yet, while I am writing this, to know the benefits derived from the work; but no doubt it has done much good. This is merely a modest beginning—just a start. Mr. Thompson can not devote a life to this kind of work unless helped. The whole country ought to be covered with this report, thoroughly organized, and the work *paid* for.

I shall, in forthcoming articles, outline some plans for consideration and discussion, out of which may grow great good to our industry.



EXTRACTING-OUTFIT.

Conveniences at an Extracting-yard.

BY W. A. H. GILSTRAP.

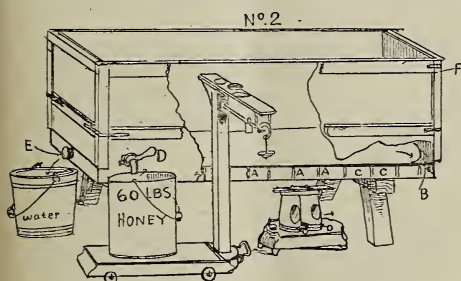
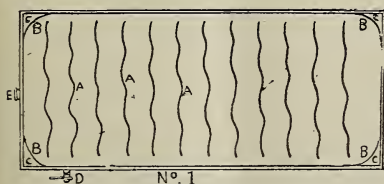
With the producer of extracted honey, a matter of no small consideration is the house and appliances by which the apiarist is enabled to put his product into marketable condition. Having had an experience of eleven years in fourteen home and out-apiaries run for extracted honey, in whole or in part, and having assisted others in extracting, possibly my views will be worth something to others.

Perhaps the first thing to mention is the cart or wheelbarrow. This is a matter of location, to a great extent. On very uneven ground the cart is out of the question. If you want the hives to be in a few nearly straight rows, tracks may be laid and cars run on the same at slight outlay of labor providing the lay of the ground is favorable. But the general appearance of different hive locations should be guarded against to avoid the loss of queens. On soft ground the broad face of an ordinary gang-plow wheel is the most

satisfactory for a wheelbarrow of any thing I have tried. My preference is to have the wheel slightly under the load, leaving just enough weight on the handles to keep the wheelbarrow steady when in motion.

If the extracting-house is not to be used for other purposes, a building 8x16 feet is large enough for one or two men. Gravitation should be used when we can do so.

My preference is to excavate sufficiently from one end of the house so the honey can run from the extractor through a pipe which empties into a McIntyre strainer on the tank. Another pipe should carry the honey from the uncapping-box to the strainer. A door should be in each end of the house, or in the side near the end. The screen used to ventilate the house should extend several inches above the windows, and a bee-space from the wall, thus forming good bee-escapes.



This top view of the tank is to illustrate the appearance before the upper bottom is in.

A, A, A, supporting-strips soldered to bottom.
B, B, B, corner pieces from top of tank to upper bottom, or floor.
C, C, C, opening from top of tank to reservoir at bottom.

D, honey-gate.
E, screw-cap to draw water out of reservoir.

NO. 2. DIAGRAM.

A, galvanized iron braces.
B, first bottom, and space between.
C, clipped covers in first bottom.
D, honey-gate.
E, water-cock or cap.
F, crating to support tank.

Among the various extractors I have used, the Cowan line suit me best. For rapid work, give me the six-frame size. But a man dreads to look at one after he extracts a few tons of honey with it—at least a medium or small man does. It means hard work to run one. Another defect is, the baskets swing against a circle, which has a tendency to bulge the baskets and rack them; and it also is trying on the combs. I extracted several carloads of honey with one of this size, and then sold it. With slight repair it can make several seasons' run yet. Where there is much moving to do, the four-frame size suits me better. There

is a question in my mind whether a two-frame machine would not suit most people better. The baskets rest plump against the irons, which keeps them true. It is light, and far more effective than many might dream.

In this country we get our honey ripened in the hives so well that there is usually no need of a tank for that purpose. But we must let the honey settle to supply the demand of our exacting market. To let the honey run through those play strainers which come with the extractors might do—no one, perhaps, has the patience to find out. How such men as Messrs. France and Coggs shall can sell honey right from the extractor is a kink we have not learned yet.

If we are to handle honey by gravitation as much as possible it follows that, in most places we need a shallow tank. This year I made one of galvanized iron, two feet wide, two high, and four feet long. The distinguishing feature about it, which must not be patented, is a double bottom. Strips of heavy galvanized iron were soldered securely to the lower bottom—such strips as are used to fasten sheet iron together for shipment. These strips are bent to strengthen the bottom. After the second bottom is put in, strips of galvanized iron six inches by two feet are first riveted in, and then soldered. Of course the corners of the upper bottom are cut away. The accompanying diagram will probably make it clear. To hold it in shape it should be crated. The tank is nailed to the crating at different points near the top; but the crating does not quite reach the bottom. Between the bottoms there is a space of about 1½ inches which can be filled with water at either corner. During the late fall flow, when honey granulates so quickly, you can warm this water by an oil-stove, or by wood fire in furnace under tank, and it is much more convenient than digging honey out of the tank and melting up elsewhere, as I have frequently been forced to do. The tank may also be used for liquefying honey at other times. A round tank could be made with the same distinguishing feature; but I like this form better.

Whatever the style of tank, a platform scale should be under the honey-gate; and when you draw off 60 pounds net, take the can off the scales and it will be just right.

Grayson, Cal., Nov. 27.

[Referring to the hoop or circle against which the baskets swing in Cowan extractors, I would say that we could make it eight-sided or six-sided, so that the baskets would strike against the flat surface rather than at the corners, but we had never supposed this would be any advantage. We will take the matter under consideration, however, and if, after testing, the change is found advisable, we will adopt it. We are always glad to get suggestions, for it is only by taking the advice and experience of practical men that we can make an article that meets the demands of severe and prolonged usage.]

The great majority of producers run the honey from the extractor into a large tank, or reservoir, not alone for the purpose of allow-

ing the honey to evaporate but also to allow particles of dirt and sediment to precipitate down so that, when the honey is drawn off, it will be clear and limpid. Mr. Coggs, I know, does run the honey into pails, and from the pails directly into kegs. But it should be remembered that a large part of his honey is buckwheat and buckwheat mixed. If there were slight particles of sediment scattered through the honey it would not show; and as this sediment consists only of pollen grains and minute particles of wax it does no harm. If Mr. Coggs were located where you are, and producing *while* honey he certainly would have to depend on precipitation to clarify his honey or else use some sort of strainer. Here it is again—the matter of locality.

Our artist has made a little mistake in the engraving. Instead of showing the 60 pound *pail* he should have shown the 60 pound *square can*; for after the honey has stood long enough to precipitate sediment, it is run into the regular marketing packages—namely, square cans.

If nothing prevents, I hope to make a run through California during the extracting season, my plans having been modified by the fact that my brother-in-law, Mr. Boyden, went in my stead to Cuba and Florida.—Ed.]

MINTLE'S LIGHTNING SECTION-FOLDER.

BY E. R. ROOT.

Some little time ago Mr. J. R. Mintle, of Glenwood, Iowa, sent us one of his section-folders to test. A careful trial showed that it is probably the fastest machine that has ever been built; and while our experts with the



MINTLE SECTION-FOLDER.

Hubbard press can fold sections just as rapidly as they can on the Mintle, yet I am strongly of the opinion that, if they were equally expert with the last named, they would reach a greater speed. An objection to it is, that it is more liable to break sections than the Hubbard. This liability is due to the fact that the section is folded with a *blow*, whereas the

Hubbard press brings a gradual squeeze, forcing the dovetails together.

The machine is certainly very ingeniously

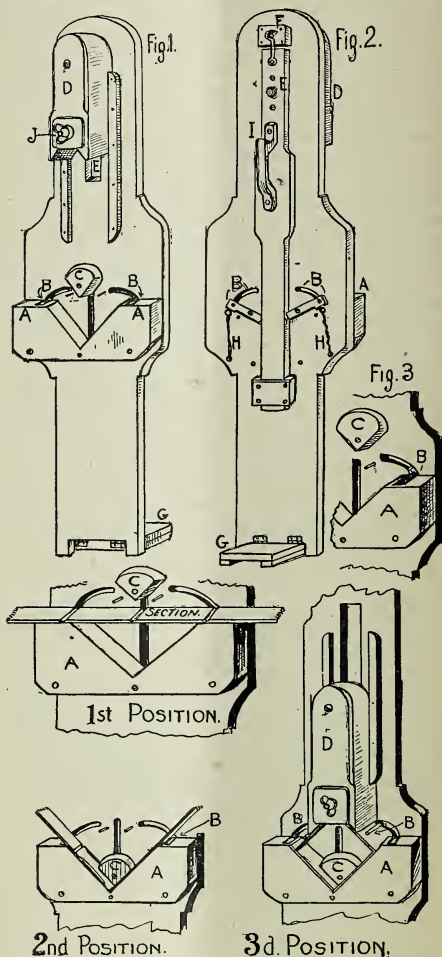


FIG. 1.—FRONT VIEW.

- A—Bed-block.
- B—Slots and movable pins.
- C—Sliding forming-block.
- D—Movable head-block.
- G—Foot-hold.
- J—Adjustable plate.

FIG. 2.—BACK VIEW.

- A—Bed-block.
- B—Slots and back view of B pin-holder.
- E—Movable lever for working C and D.
- F—Stop-block with hook to fasten lever E.
- G—Foot hold.
- H—Elastic springs.
- I—Handle.

First position. section in position on bed-block, with C above, ready to descend.

Second position, first fold produced by C. Notice at B the pins in cavity of bed-block, and ready to rise in slot.

Third position, pins B rising and following direction of slots, force the rest of the section forward, where it is met, and the dovetail locked by the descent of D. As the lever returns to its first position the block C, in its ascent, throws off the formed section if the machine is inclined forward a trifle.

constructed, and to be understood and appreciated it needs to be seen. Still, our artist has succeeded in making a set of engravings that show its manner of construction, as well as its exact *modus operandi*.

The operator sits down in a chair, as shown in the small engraving, with a pile of section-blanks in his lap. He picks up a blank, puts it in the machine as shown, and with the left hand brings down the slide with a blow. As the block D comes down, the corner block C precedes it, crowding the section down into position. The fingers BB then draw the two ends together, bringing them almost in contact, when the block D bangs the ends together. As D moves up it picks up the section and gives it a toss into a basket. The whole thing is done so quickly that its exact manner of operation can not be seen. All one sees is the sections being spit out of the machine as fast as the hand can move up and down.

Mr. Mintle writes us that he has overcome the defect of breaking sections by substituting a lever movement for the hammer action; but the improved machine I have not yet seen, and therefore can not certify as to its merits.

There is another objection; and that is, it is considerably more complicated than the Hubbard, requiring a very nice adjustment of all the parts. And then there is the danger that it will get out of order. The Hubbard has only two moving parts, and can be operated by any man, woman, or child without instruction and without experience; nor can it possibly, with ordinary usage, get out of order. Its speed, while probably not as great as that of the Mintle, would probably come within 25 per cent of it, and it might equal it.

ness for only a little honey for your own use."

"But I think I wish to use frame hives. What number of frames did the Langstroth hive take or hold?"

"Mr. Langstroth made and advocated a hive holding ten frames, about $16\frac{1}{2}$ by $8\frac{1}{2}$ inside measure, which would give about 2175 cubic inches inside the frames, or 1450 square inches of comb."

"Well, was that all right?"

"As the size of the brood chamber has much to do with the average yield of section honey, perhaps it would be well to look into the matter a little."

"Section honey! Why, is that different from the box honey of the past?"

"It is just the same, only the box honey of the past was honey stored in boxes holding two or more combs, and weighing from four to fifteen pounds, while the section honey of today is stored in little boxes or sections, each one of which holds only a single comb, the section box and all weighing only about a pound."

"I think I understand. But how are you going to look into the matter of hives?"

"To look properly into the matter of hives we must begin with the queen, or mother-bee, only one of which is allowed with each colony of bees, except at times of after-swarms."

"What has the queen got to do with the matter?"

"The queen is the mother of all the bees there are in a colony, hence lays all of the eggs from which the bees are produced. As a rule she will not occupy more than 800 square inches of comb for any length of time; therefore you will see that, if you use ten Langstroth frames, you will have 650 square inches of comb filled with honey and pollen."

"Well, what if I do? Isn't that all right?"

"If you want honey only for family use, this may be all right; but from your wishing to start with frame hives I took it for granted that you wished to produce honey for market. In case we have a new swarm in such a hive we shall have from 500 to 600 square inches of comb, filled with the best of honey, which would be from 25 to 30 pounds. So each year you would have this nice honey in your hives, instead of having it in the sections, and turning it into cash."

"But would not the bees need this for wintering?"

"In case of a very poor season such large hives sometimes have honey for wintering when smaller ones do not; but with the small ones, very few lack in stores, when there is a yield of honey sufficient to have any stored in sections. When a shortage does occur, the bees can be fed sugar syrup, which is fully as good for winter stores as honey."

"But how about the pollen you mentioned a while ago?"

"In order not to get any pollen in our sections it is best to allow 200 square inches of comb for that, and the honey the bees always will have in the upper corners of the combs. So allowing this we have 1000 square inches of comb, or about 1500 cubic inches, as the right size for the brood-chamber, regardless of what



REGARDING BEE HIVES.

A rap at the door, and on opening it I find Mr. Jones, who says, "Good evening, Mr. Doolittle. The evenings seem so long now that I thought I would run over a little while and have a chat with you."

"Glad you came, Bro. Jones. And what is the chat to be about? For I see by your looks that you have something on your mind."

"Well, you know I found two swarms of bees in the woods this fall; and if they winter through I wish to get them into hives in the spring, as a start for an apiary. I want to make the hives this winter, and I was wondering what size would be best for them."

"When I first commenced keeping bees, Langstroth, Quinby, Gallup, and others recommended a hive holding about 2000 cubic inches as the right size; and if you expect to make only a box, without any frames in it, I should say that the size recommended by 'the fathers' would not be very bad for you, especially if you calculate to go into the busi-

style of frame is used; and this is the size I have used mostly during the past 30 years."

"What number of Langstroth frames will give that size of brood chamber?"

"About $7\frac{1}{2}$; and where I use the Langstroth frame I use only seven in some hives and eight in others."

"But do you have two different sizes of hives?"

"No. As, occasionally, a queen will occupy ten L. frames with brood I make all the L. hives I use to hold ten frames; and by the use of dummies the hive can be contracted down from a ten-frame hive to one holding only five or six, if the queen is only equal to such a number of combs."

"What is a dummy?"

"I make them of inch lumber—rough hemlock or the cheapest pine being as good as any thing for this. The lumber is cut the same dimensions as the outside of the frames less the top-bar, and then the top-bar to a frame is nailed to it. Thus the dummy hangs in the hive in place of one frame."

"And these boards are used to take the place of the frames the queen does not fill with brood?"

"Yes. All frames which she does not have filled with brood at the beginning of the honey-flow are taken out, and their places filled with these boards; and in this way even a four-frame colony can be made to contribute something toward our crop of comb honey; though better results accordingly can be secured from the colony whose queen will keep 7, 8, 9, or 10 combs occupied with brood immediately preceding the honey harvest."

"You have spoken several times about the honey harvest. What do you mean by that? I thought bees could get honey at any time when the weather was pleasant."

"In this thought you erred, especially in this locality. Our first honey comes from the willow. The next from fruit-bloom; but neither of these generally yields more than the bees need to carry on brood-rearing properly. After fruit-bloom we have a period during which little or no honey is gathered, lasting from fifteen days to three weeks, no matter what the weather is, as there are no honey-producing flowers in bloom at that time. About the middle of June the white clover opens sufficiently for the bees to begin storing from that, where white clover is abundant."

"But our land is kept so constantly under the plow that we have little here."

"You are right in this, and so we do not calculate much on white clover for surplus. But basswood yields honey (or nectar) in large quantities, as a rule, and for this we calculate and plan, and at the opening of basswood is the time to use the dummies, as we talked about."

"Whew! Is that nine the clock is striking? How short the evening has been! I told Mrs. Jones I would be home before nine, and I must be going. "Good night."



ALSIKE AND OTHER CLOVERS IN WISCONSIN;
ALSO SOMETHING ABOUT PROPOLIS.

Mr. Root.—Since the clover symposium was published I have received a number of inquiries regarding the alsike, two of them from Oregon. I am pleased to see so much interest in this the best of the clover family.

Our second crop (after-growth) here in Northern Wisconsin this season made a heavier hay crop than the first crop, the weather being more favorable the latter part of the season. Our bees worked diligently on the second crop from Aug. 1 until the alsike was harvested the latter part of September. No other plant yields nectar for so long a time, except, perhaps, sweet clover. We sometimes get a splendid catch of clover by sowing in August, as A. I. Root has written of the Traverse region. I have some sown Sept. 12 that appears to be still growing under six inches of snow; but there is no frost in the ground.

We often read in the bee-journals of large yields of honey in different sections of the country. There are, perhaps, localities where they secure greater yields of honey per colony than we do here; but when it comes to big yields of propolis I claim the championship for our bees. At the close of summer they plaster every crack and crevice, fasten brood-frames and sections together solid, glue the cover fast to the hive, so that we need a strong chisel to pry them apart. The plant from which our bees collect propolis is dwarf birch, *Retula glandulosa*. I have frequently watched his beeship gather his load from the resinous dots on the birch. I have also seen them gather propolis from some of the thoroughworts, *Eupatorium*. WM. ROBINSON.

Chapman, Wis., Dec. 4.

BROOM SEDGE AS A SUBSTITUTE FOR THE
BROOM; ALSO FOR BRUSHING BEES
OFF THE COMBS.

While traveling through Tennessee I noticed a peculiar kind of tall grass, and asked a resident of that State what it was. He told me it was broom sedge, and that it grew in wornout fields.

Last winter, while remaining at a hotel for two days, on the shore of St. Andrews Bay, I noticed a large field of broom sedge near, and that there were brooms in every room made from it. On talking with my landlady in reference to it she said, "I have enough gathered before heavy frosts come to make a year's supply of brooms, and I make them only as I need them."

It was quite cool while I was there, but I went out to the field during the warmest part of the day, and gathered sedge, and tied it up into brooms which I took home. A northern friend, seeing them, remarked, "I don't see why people here do not make brooms the usual way, and put them upon the market."

THE winter thus far has been comparatively mild.

The stems of the sedge are wrapped with twine, which forms the handle; and my landlady said she could not sweep with a wooden-handled broom, on account of her rheumatism, but she could with one of these. Every room had a fireplace, and the floors were bare, and the brooms were fine in sweeping up litter into the fire. When I returned to my home in the North I brought in my trunk a short-handled broom, and it is the nicest brush I ever had to brush the bees from combs. I'm surprised that Southern bee-keepers have not used them for this purpose, and told us about them.

The landlord formerly kept a good many bees, but of late years they had not done well. His bees were in tall box hives, made of the heavy southern pine, and he had tried movable-frame hives, but he did not like them, as his bees did best in box hives. He gave his bees little attention, as his family preferred Florida syrup to honey.

MRS. L. HARRISON.

St. Andrews Bay, Florida.

[Now, Mrs. H., do you see the prospect of starting you in an industrial business? Perhaps you had better turn the broom-making task over to Booker T. Washington, and let the colored women who have the apiary at Tuskegee, Ala., manufacture brooms for bee-keepers.—A. I. R.]

A GOOD REPORT FROM BUCKWHEAT.

My bees averaged about 60 lbs. of buckwheat extracted honey this year. S. J. SNYDER.

Venice Center, N. Y., Dec. 7.

[The above is given because so many people inquire what amount of honey they may expect if they sow an acre or several acres of buckwheat. In our locality it has been many long years since we have had any thing like the above, or even half as much. If friend Snyder had told us how many colonies of bees he had in one place we could tell better about it; and very likely this large yield was made where there were hundreds of acres within range of the bees' flight.—A. I. R.]

UNITING BEES IN WINTER.

Please tell in GLEANINGS how to double up colonies for winter. Is it not necessary to use a double screen between the two colonies during the night? I used a single screen, with the result that, in the morning, I found over a quart of dead bees above the screen, and nearly a quart below. There had been a fierce battle. That was in August.

Vancouver, Wash. G. W. MINKLER.

[It is not usually necessary to have even a single screen, let alone a double one. Of course, a great deal depends on what kind of bees you propose to unite. If they are cross hybrids or Cyprians, one may have a good deal of difficulty. In such cases I would place the two clusters of bees, one on each side of the hive; close them up quietly, and then go back in fifteen or twenty minutes and open them very quietly; and if there is no fighting, let

them go. But if there seem to be "wars and rumors of wars" I would smoke them pretty thoroughly with tobacco smoke; but be careful not to overdo it. After that they will usually unite quite peaceably. With our ordinary Italians we scarcely ever have any trouble. We simply place two lots of bees together, and close the hive up.—Ed]



NEXT issue will have 16 extra pages.

THE weather all over the country has been exceedingly mild. This will mean good wintering.

WE have quantities of reading-matter on hand that has been lying over from issue to issue simply because we have not been able to find room for it. A little latter on we shall be able to get it before our readers. Our printers say we never before had so much "good stuff" on hand as now, and I think they are right.

MR. HERSCHISER, at the Geneva convention, in speaking of the tall thin section, mentioned one fact that I had not thought of before; namely, that the thinner the box the more transparent and beautiful the honey. Mr. H. has had long and extended experience in the matter of honey exhibits, and expressed himself as generally favoring the tall box.

THE PERSONNEL OF THE UTTER TRIAL.

WE find it impossible to show in this issue the *personnel* of those who took an active part in the celebrated Utter trial at Goshen, N. Y., the engravings having arrived too late; but in our next issue we will give you pictures of Bacon & Merritt, of the judge who presided at the trial, of the star witness, Frank Benton, entomologist from the Division of Entomology, Washington, D. C., and of the defendant bee-keeper Mr. J. W. Utter. Our printing department has been taxed to its utmost to finish up the latest edition of our A B C book, of 500 pages, and now that is out of the way we shall be able to get out extra pages for GLEANINGS. Just now we have on hand enough matter, some of it in type, to make complete two or three extra numbers. In our next we will begin the subject of bottling honey.

GRAFTING CELLS WITH A MEDICINE-DROPPER.

A CORRESPONDENT suggests the use of an ordinary medicine-dropper, or pipette, or what some call a fountain-pen filler, for the purpose of handling royal jelly. If some one else has suggested such a device, I do not now recall it; but I feel confident that royal jelly could be handled this way easily. Its manner

of use would be something as follows: Squeeze the rubber bulb, insert the glass point in the royal food, allow the bulb to expand, when the food will be taken up into the glass tube; then for the purpose of grafting, squeeze the bulb a trifle, and a small drop would be exuded into a cell cup. This operation could be easily repeated on cell cup after cell cup. It looks pretty in theory, but it may be poor in practice.

SHALL THERE BE A JOINT MEETING OF BEE AND FRUIT MEN?

THE suggestion was made at the Geneva convention that the National Bee-keepers' Association meet at the Pan-American Exposition at the same time as the American Pomological Society; that now a great interest having been stimulated in the matter as to whether bees puncture fruit, it would be of great importance to have a joint session of the bee and fruit men, of one day, say, at which time the two interests could discuss these matters dispassionately, with the view of getting at the actual facts.

The place as to where the next meeting of the National Bee-keepers' Association will hold its convention has not been decided as yet. There was a rumor, apparently unfounded, that the Grand Army of the Republic had completed arrangements for holding its next encampment at Denver, and that a rate of a cent a mile had been secured; but in some of the later papers I see this has been contradicted.

WHAT THE NATIONAL BEE-KEEPERS' ASSOCIATION DID FOR BEE-KEEPERS.

THE following letter, received from a subscriber who, I judge, has not been a member of this Association, explains itself:

Mr. Root:—I wish to congratulate you on the interest you have taken, and the results obtained, in regard to the Uter vs. Uter bee-suit. Hurrah for the National Bee-keepers' Association! I am glad my eyes have been opened sufficiently to cause me to send in my name and a dollar to General Manager Secor, asking to become a member of the very best order bee-keepers ever had. I wonder if bee men in general realize what the results of the Uter suit means to them, and what it would have meant had the opposite decision been the result. I learned of the result through the *Rural New-Yorker*. Suppose, for once, that the lower court's decision had been sustained; where would bee-keepers stand? All the ignorant fruit growers in the country would have ground us into the earth, and we should have had to grin and bear it. So, again, I say, "Hurrah for the National Bee-keepers' Association!" It has laid the cornerstone of a very solid foundation upon which we, as bee-keepers, can build our hopes in regard to having our rights protected.

Kingston, N. Y., Dec. 31.

AARON SNYDER.

There ought to be five thousand more bee-keepers who would see and feel the same way. What could we do if we had such a membership? But with only five hundred we have been able to bring about a verdict in favor of the bees that will be worth to the bee-keepers of this land thousands of dollars. Already, as I understand it, a case that was about to be tried, of a similar nature, was dismissed as soon as it was known how the Uter trial had been decided at Goshen. We do not know how many more cases would have sprung up if the verdict had been for the fruit-men.

But I wish it distinctly understood that this was not only a case of bees versus fruit, but a case which showed that the two interests, so far from being antagonistic, are in entire harmony with each other; that fruit, at least, is dependent for its proper fertilization, to a great extent, on the work of the bee.

I would suggest that our subscribers send in short articles for their local agricultural papers, giving the result of the trial at Goshen, N. Y. Let us spread the news far and wide.

Strange as it may seem, and yet not very strange, the progressive fruit-men, with perhaps one or two exceptions, are very much pleased with the verdict.

O. O. POPPLETON.

ON page 47 of this issue we are able to present a very natural likeness of our old friend and correspondent—Mr. O. O. Poppleton, of Stuart, Florida. There are very few bee-keepers in the United States who have had a more extended and more varied experience in different climates than our friend. He is familiar with the conditions necessary to success in bee culture in Iowa, Florida, and in Cuba.

The first we know of him as a bee keeper was in Iowa. Here he began the business moderately, but made the few he did keep yield large averages. But poor health on the part of his wife finally compelled him to seek a more favorable climate, which he found in Florida. Here he engaged in his favorite pursuit, but at this time it appears that he took up with what is known as the "Long Idea" hive. The frames were 12 inches square, and anywhere from 20 to 24 frames to the hive. Instead of piling the hives one on top of another, on the tiering-up plan, the hive proper was extended in a horizontal line. If the bees required 10 or 12 frames of brood they were allowed to have them. Then the surplus frames were placed on either side of the brood. But the Long Idea is primarily intended for the production of *extracted* honey. Mr. Poppleton himself believes that the hive first devised by Mr. Langstroth 50 years ago has not been improved upon, so far as shape and proportion of frames are concerned, for the production of *comb* honey. But the production of *extracted* honey is so different, he thinks it is doubtful if the same style of hive and frame can be best for both. While he is using a special extracting hive, frames 12 inches square, yet if he were going to start over he would keep the same depth but lengthen the frames 2 inches. This would more nearly approximate the proportions of the Jumbo frame, or what is in reality the Langstroth, but 2½ inches deeper.

Mr. Poppleton is a practical, conservative bee-keeper. While not a voluminous writer, yet what he does write always finds its way into the bee-journals. My father once said, when he had the editorial management of this journal, "Whenever you see any thing from that man Poppleton" (showing me manuscript he had just received from him), "just hand it right in to the printers. It is *always* good copy. He is sound and practical." During

the time I have had charge of the bee department, I have found this statement literally true.

During all the years since he first began keeping bees, Mr. Poppleton has been a close student, and exceedingly careful in drawing conclusions—so much so that the Root Co. has at various times had him conduct experiments in advance of the season at the North, because we knew we could rely on whatever he said.

Mr. Poppleton last season was rather more fortunate than most bee-keepers, for he had a large crop of honey. Whether this was due to his locality or to his careful management, I can not say; but I am inclined to believe that the latter has very much to do with it.

THE STATE CONVENTION OF NEW YORK— SPRAYING DURING BLOOMING-TIME.

I HAVE just come from a very important meeting of the New York State Association of Bee-keepers' Societies. I will not attempt at this time to give a report, but merely state that two professors from the Geneva Experiment Station were present, and gave us some most valuable proof to the effect that spraying during blooming-time is not only detrimental to the development of pollen, but does most decidedly cut down the output of fruit. But more of this anon.

BLACK BROOD, AND HOW TO CURE.

I had quite a talk with the New York foul-brood inspectors, and from them I received further assurance that black brood was being rapidly brought under control, although they admitted there were some sections where the disease had done some destructive work the past season, and that it would probably break out again the coming season. But the most interesting fact to me was that the McEvoy treatment, such as has been prescribed for *foul* brood would, when carefully administered, also cure *black* brood. Mr. Stewart believed that the reason the treatment had proved a failure was because the bee-keepers in some cases had not been careful enough to disinfect their persons and clothing, and had been a little careless in letting bees get at diseased combs or infected honey. He did not believe the disease was any more difficult to cure than foul brood. The first symptoms of black brood, he explained, were usually a yellow spot about the center of the coil of the larva. In some cases the whole grub would have a yellowish cast. The larva would appear to act as if something was the matter with it—wriggle and squirm around. The spot would grow larger until the whole larva was yellow. It would then die and turn brown. The dead matter would not rattle. It might string out a quarter of an inch or so, but never be too long. Black brood has a sour, yeasty smell. Another important characteristic was that the larvae of black brood usually died before being capped, while in foul brood the reverse was true.

As to pickled brood, it looked very much like black brood, but the dead matter was more watery. At times there would be a fungus or mold on it which is never found on black brood.

THE ONTARIO BEE KEEPERS' CONVENTION AT NIAGARA FALLS.

AS I have already stated, this was not largely attended, but the discussions and general interest were of the very best. I arrived one day late, just in time to hear the report of Wm. McEvoy, Inspector of Apiaries. From that report I have made a digest as follows:

During 1900 he visited bee-yards in 13 counties. He inspected 100 apiaries, and found foul brood in 33 of them, and dead brood of other kinds in many others which had been mistaken for foul brood. The first thing he did when he entered a locality was to pick out the best bee keeper in it and get him to take him from place to place so that he could see how he managed the business, and, if required, would make a valuable witness. He did this for the last ten years, and kept up a correspondence with the most of them, and by this means he always knew pretty well how all were getting on at the curing. At this work he burned a good deal of midnight oil, and sometimes he wrote all night and part of the next morning. Sometimes death and sickness in families delayed the curing; and in all places where he found this to be the case he went and did the curing himself.

Since he was first appointed inspector, Mr. McEvoy has had thousands of diseased colonies cured of foul brood, and very many apiaries that were once in a bad state with foul brood have not only been cured but have given some of the largest average yields of honey of any ever taken in the Province of Ontario. One of the treated apiaries gave an average of 200 pounds of clover and basswood honey per colony, and 50 per cent increase in bees, and had plenty of clover and basswood honey left in the hives to winter the bees. This yield was taken in a locality where no buckwheat was grown.

Every bee-keeper visited during the past season treated him in the most courteous and generous way.

I regret that I am unable to give even a passing mention of the other valuable papers that were read. But there was one paper or address from Dr. Fletcher, of the Experiment Farm, Ottawa, that was listened to with the closest attention, more especially as it related to a vital subject; namely, the question of bees in orchards, and whether they injure fruit or not. He said that the subject had doubtless been discussed by the council, owing to the great lawsuits which were now attracting the attention of the bee-keepers in the United States and Canada. The case of Mr. Sparling, which had only yesterday been given in his favor, and the case of the Utter brothers, of Amity, N. Y., had been watched carefully, as it was thought that these would be taken as precedents. He pointed out the advantage of every member of the Association keeping well posted in all matters bearing directly upon the subject of whether it is possible for bees to injure fruit or not. It had been claimed in both of these cases that several things which every bee-keeper knew were utterly impossible had been done. He was neither a bee-keeper nor a fruit-grower, but he

was keenly interested in finding out what were the actual facts with regard to the alleged injuries to fruits by insects. He had studied the matter carefully for a great many years, and from all he had been able to see and learn from the writings of reliable observers there had been no case of actual injury to uninjured fruit proved which was undoubtedly due in the first case to bees. He showed a diagram of the mouth parts of the bee and the wasp, and explained the use of each. He was under the impression that nearly all of the injuries attributed to bees were begun in the first place by wasps, ants, or some other insect or bird.

The question was by no means a new one—it had been studied for a great many years, and he believed that there was a great deal of ignorance about the whole question which ought to have been solved before this, either by bee-keepers or the students of insect life. However, from all that he had been able to read he believed that entomologists were almost all of the opinion that bees were not responsible for the injuries sometimes attributed to them.

He read from the *Rural New-Yorker* of November 10th an article entitled "Do Bees Injure Fruit?" which was written by Prof. Slingerland, of Cornell University, one of the very first practical entomologists in the United States. This article detailed some very careful experiments which were carried out by the Agricultural Department at Aurora, Illinois, by which colonies of bees were kept in a closed building so that they were brought to the stages of hunger, thirst, and starvation by artificial conditions, but could not be induced in any instance to attack the fruit exposed unless it was first punctured or injured in some other way.

He thought that every member of the Beekeepers' Association should read this article, and should be in position to speak definitely with his neighbors and those with whom he came in contact on this question.

These tests were continued for many weeks, and the conclusion drawn by Prof. Slingerland was that the experiments showed that honeybees are not only unable to penetrate the skin of fruits, but they also appear to be unable, even when impelled by the direst necessity, to penetrate the films surrounding grapes, even after the skin has been removed.

One of the contentions with regard to bees being a nuisance was that bees stung pickers in fruit gardens, and worried horses when they went to the trough to drink. His own opinion was that, although many people were afraid of bees, and often made them sting by hitting at them, bees never sting except in self-defense or in defense of their hives.

Again, it was claimed by many that the bees stung the fruit, and that this induced decay. This he believed was entirely erroneous; and although he had not tried any experiment he would certainly suppose that the formic acid which forms the poison of the bee's sting would have exactly the opposite effect, and would preserve the fruit rather than cause it to decay. It is well known that wasps preserve the caterpillars and other insects which

they stored up for their young by stinging them, and that insects stung by wasps remained alive, but in a perfectly torpid condition, for several weeks. The formic acid of a bee's sting is almost identical, chemically, with chloroform, so that practically the food of wasps was chloroformed and remained as fresh food for the grubs of the wasps for a long time, owing to the antiseptic properties of the poison.

An interesting feature of this address was an explanation of many of the devices found in flowers as the means provided by nature to secure cross-fertilization. Some of the more prominent methods by which certain insects, particularly those which, like the honey-bee, fly rapidly from plant to plant, were illustrated by means of excellent diagrams showing the different forms of flowers and their parts; that the stamens and pistils, the two essential organs in many plants, were not ripe at the same time; and experiments were mentioned by which it was proved that it is more advantageous for a flower to be fertilized by pollen from another flower, or from the same kind of flower, but on a different plant, than it is if its own pollen were used. It was even stated that some flowers are actually sterile to their own pollen.

He urged bee-keepers to strive to put themselves in the position of being able to give definite opinions on such important questions as this one which had now come up, and pointed out that it was one which concerned every one of them; that as a society they should band themselves together for mutual protection, not against fruit-growers or any one else, but simply to be able to speak positively, and give the actual truth with regard to these and similar matters. He was quite sure that bees did not injure fruit, however ripe it might be, unless the skin was actually cracked beforehand, either with their mandibles or tongues or stings. Many of the enlightened fruit-growers know only too well the enormous advantage of having bees near their orchards, and so he actually keep bees in their orchards simply for the benefit of bees working on the flowers. He felt sure that fuller knowledge of the actual habits of the bees would bring about a better understanding between fruit-growers, and would be of enormous advantage, both to them and bee-keepers, whose interests were identically the same.

In our next issue I hope to give a report of another paper read at this convention—experiments in wintering, showing comparative losses between outdoor and indoor wintering.

G. N. L., Conn.—We know of no way of bleaching colored extracted honey. If you desire a light-colored article for pharmaceutical purposes, the only thing to do is to buy the light colored honey in the first place. The whitest honey in the world is that from willow-herb. This is almost absolutely water-white. The next lightest is the mountain sage, and the next in order is basswood, then clover.



Who is he that overcometh the world but he that believeth that Jesus is the Son of God?—1. JOHN 5:5.

The relation in which the father and mother stand to each other is the foundation of every home. It is the cornerstone. No true home can be built securely, and stand securely, without perfect harmony between the father and mother—or, if you choose, between the husband and wife. No matter what the parents may say to the children, their words will have but little weight or effect unless these words correspond with the conduct. The home should be harmony—harmony between the parents, and harmony between the children; and, more important still, if any thing, harmony between parents and children. Sometimes when Mrs. Root and I see *our* children each one taking up different departments in our business, and all being satisfied and contented to work together—I do not wish to boast, dear friends, for God knows how little I have to boast of; but I do thank God every day of my life for the peace and harmony in which all the members of our family work together. As our children get married, and have homes of their own, this same harmony seems to take in and include the new members also; but, dear friends, I wish to tell you that this has not been done without much hard work. Many fervent and earnest prayers have been offered up, and much struggle and fighting against our own inclinations and impulses. Some of you may think it is *easy* for me to be gentle and kind. You are mistaken. The only reason why I take this subject up just now is because I am so deeply concerned and so *very* anxious about the members of different homes of which I know; and the thought that perhaps I may help you by some chapters in my own experience is what calls me to take up this talk to-day.

In *Our Homes* for Nov. 1 I told of the happy time Mrs. Root and I had together on that farm in the woods. I told you that, although we were about sixty years old, and had brought up a family of children, we enjoyed our outing in the woods as much as we enjoyed being together when we were both in our teens. I told you of the great *flood* of joy and peace that seemed to spread like a mantle over me. Some of you may ask, "How long did it last?" Well, it ought to have lasted the rest of my life. Yes, it may last from now on, during the rest of our lives, providing we both grasp the beautiful thought in the text I have chosen; yes, if even *one* of the parents gets hold of the great truth in that great text, the other will pretty surely come along.

Several times in this eventful life of mine I have heard husbands tell how impossible it was to get along in peace and quietness with *such* a wife—I was going to say, such a wife as God had given him, and I still think that is about the way to put it. Yes, I have heard wives too (not so many of them), but a *few*

women have told me how impossible it was for them to live with such husbands as God had given them. Sometimes when the dear Savior lifts me up so I can get a glimpse of the mount of transfiguration, I feel almost as if I could live in at least *tolerable* peace and harmony with almost any woman. I feel that, through the spirit of Christ Jesus, I might *win* her out of her fretful and unlovely ways into peace and harmony. Yes, I have urged and enjoined unhappy wives to *try* to win their husbands by love and gentleness away from evil and vicious habits. Mind you, dear brother or sister, I am not boasting of what I can do or would do as a peacemaker; but I am boasting of what the spirit of *Christ Jesus* may do.

Well, after we got back home from that pleasant trip away off in the woods, the Holy Spirit did seem to follow us. We were happy in talking over our experience, and in telling the children about it; and, for the time, we were very patient and kind to each other. I began to think the rest of our lives was really to be a long honeymoon. For one thing, my health was better while I was in the Traverse region. This may be owing largely, however, to the fact that I was away from business cares. Please do not imagine that Mrs. Root and I are ever in the habit of quarreling. We sometimes scold each other, but mostly in pleasantry. Our lives are very busy ones—at least they have always been so thus far. When there was so much to do, and so much to see to, some things would be neglected more or less. As an illustration, it has always been my habit to have tools, baskets, and every thing else, put under shelter before a rain. Very few people seem to think it worth while to take care of tools and implements as I do. It is not so much the value of things as it is getting in the habit of letting go to ruin and waste things that in the aggregate cost a great deal of money. Well, Mrs. Root is a very neat housekeeper. She does not like to have her domain lumbered up with things of uncertain or no value. Sometimes she pushes them outdoors to get rid of them; then when I am not feeling very well I sometimes scold. Perhaps I blame her for something she did not do; and she, being tired like myself, does not reply just as kindly and lovingly as we used to talk to each other during that holiday up in the woods.

Perhaps somebody may say, "Why, Mr. Root, husbands and wives *always* talk to each other in that way. They do not mean any thing, and it is all right." But I happen to know by experience that it is *not* all right or best for *me*. After I have scolded about some unimportant matter, and perhaps brought on myself replies that are not always gentle and kind, I discover that the gentle, loving spirit of Christ Jesus has been driven out of my heart. My happiness is gone, and it is not an easy matter to get it back again. Sometimes it takes me quite a little spell to get back into the straight and narrow path where peace and happiness reign. I am fortunate in at least this one respect: Whenever I am feeling sorry I spoke cross or hastily, and come up to Mrs.

Root and put my arm about her lovingly, she always forgets and forgives. Yes, thank God, she is *always* ready at any time to go *more* than half way. Sometimes when others are around, and I do not wish to attract observation, I simply lay my hand quietly over hers. She understands it, and we two start out to meet life's conflicts once more, *hand in hand*. Some of you may think it is hardly worth while to be so very careful about such little disagreements as I have mentioned. As I think it over, and watch humanity, I have decided it is one of the most important things in this world, that this perfect peace and harmony, this full understanding, this tender relation between father and mother, shall never lapse for a single instant. You may have to pray most earnestly for the influences of the Holy Spirit to keep you from making a mistake and doing harm, but it can be done.*

After I had been home a few weeks my old trouble from malaria came back. I caught cold—I do not know exactly how. It settled in my throat, teeth, and ears. I had toothache, earache, and sore throat all together. I could not stand drafts, and had to be bundled up. I had just got my new poultry-house fixed very nicely with a floor of dry dust. Mrs. Root admired the dry dust with me, but she did not like to have it tracked into the house on her carpets. One day when I was suffering from my "compound" maladies, I forgot and walked through the house, leaving dry dust at every step (at least she says I did). Well, when she began to remonstrate, in no very gentle terms, perhaps, I had partly opened my mouth to say that a little dust on the carpet was a trifling matter compared with some other things; and then I thought of adding that she made a great deal of *fuss* about a little matter. Then Satan added (I know it was Satan, because the observation or the suggestion he made bore his ear-marks so plainly), "If I were you I would just tell her that she makes herself miserable, and everybody else, by chasing around with a brush and dust-pan, and making such a row about a little dust." I really hope Mrs. Root will not read this. I am going to keep it away from her if I can, because I do not know but she will bristle up (like our big white rooster), ready for a fight when she finds out that I ever tolerated for one brief moment even the thought of saying any thing so unkind and unreasonable. But I did *not* say it, thank God, and, in fact, I did

Every little while somebody takes the ground that people who commit suicide are insane. I can not agree with them. A few days ago a girl in her teens was planning to go to a party. Her whole mind was taken up with parties, and her mother had objected because of her youth, and because of the character of those she was meeting. Her mother told her she could not consent to let her go. The girl declared she *would* go. When the mother would not relent the girl became very angry, and told her mother, in a passion, that she would be sorry. While still in anger she procured and drank carbolio acid. Such cases are getting to be alarmingly frequent—yes, even suicide among boys and girls. The struggle between the mother and daughter started in regard to a comparatively trifling matter. Satan, as I have suggested, seems to be getting a new hold on humanity right along this line. Let us beware how we invite his presence for a single moment in unkind thoughts, or, worse still, in letting those thoughts *get into words*.

not say any thing at all. I will tell you what kept me from saying any thing, even if I *was* groaning with toothache and earache together. Permit me to digress a little.

Every fall, as soon as the flies are surely gone, our screen-doors are taken off and carried up into the attic. It is up two flights of stairs, and one of them is pretty narrow. The doors are rather heavy too—some of them. Huber has always done this work, but he is off at school now, you know. Well, I told Mrs. Root I would send one of the men over from the factory; but I kept forgetting it. One day when I came home she said, "Dear husband, you can not guess who took off all the screen-doors and put them safely away in the attic, the screws tied to each door so they won't be lost, every thing all nice and straight."

"No, I do not believe I can guess. Who did it?"

She came up close to me so I could easily get hold of her if I wanted to, and replied, with an arch look, "It was the woman you *love* who did it."

I would not tell this, dear friends, if it were not that it gives you a glimpse of our usual relation to each other better than any thing else I can think of. I suppose she will scold like every thing when she sees it in print; but I will try to explain to her that I have taken the liberty of repeating such words only because I am sure it will do good in *many* homes where GLEANINGS is read. She said it because she *knew* it was *true*. Dear me! haven't I told her so enough times during the years we have lived together so she might be *sure* of it? Let us now hitch our two stories together.

This matter about the screen-doors happened some two or three days before that of the dusty carpet. When I came in suffering with the cold in my head, I presume I was tired out with many cares over at the factory, and attending to correspondence when I hardly felt able to do so; but when those unkind and uncalled-for words came into my mind, all of a sudden the transaction of the screen-doors came before me. Dear reader, was it not the voice of Christ Jesus that said, "Gently, gently, child. Remember, she to whom you are about to speak is 'the woman you love.' Surely, you do not feel unkind or even unpleasant toward *her*?"

I had been praying that the dear Savior would help me to bear patiently whatever little crosses I might be called on to bear. I had prayed that the influences of his Spirit might be near me and keep me from inconsistencies; yes, every day of my life, almost, I pray for this one thing. My prayer was answered. I did not say a word. I presume I might have scraped up grace enough to beg her pardon for being thoughtless, and promised to be more careful. I certainly did not feel unkind, but I was worried and wearied. I hurried to my resting-place, and after about half an hour's sleep I was myself again.

The father and mother should strive above all things to be *consistent* before the children. It is right and proper that the children should

see you give the mother a kind word and perhaps a loving touch ; but if you should, later in the day, or the next day, scold and give her pain by harsh words, it would be inconsistent. The average boy or girl might say, and with reason, " Well, I do not think pa cares so very much about ma after all. If he is going to scold just a little while after, in the way he has been doing, he had better leave off the first part of it. He had better either be *less* kind and gentle at times if he is going to get cross so soon, and not be so changeable."

Yes, even children notice inconsistencies like these ; but even if their childish hearts do revolt they will learn to copy it after just a little while. They get an idea it is the *proper thing* to do to talk "pretty" when you want a favor, and then be cross and unkind when you feel like it. It is hard work for me to be even-tempered and always the same ; and sometimes I feel like giving up and saying I can not do it ; but for the dear Savior's sake I will keep trying. When I can keep in mind that I am a pupil, and that he is the teacher, that he is to lead and I am simply to follow, *then* I come out conqueror.

After the words I have mentioned, spoken in jest and pleasantry about the screen-door, it occurred to me there was something in the Bible that seemed a little like it. I found it in the 20th chapter of John. In fact, John, in several places, in speaking of himself, instead of using the pronoun *I*, says, "that disciple whom Jesus loved." I have often wondered at these words. It would seem to indicate that there were certain ones for whom Jesus cherished a particular regard. Somewhere else he says, "If ye love me, keep my commandments ;" and we might infer that John had been unusually ready to hear his words and obey, as nearly as he could, to the letter. John was a disciple particularly loved by the Savior, and he seems so sure of it that he does not hesitate to say as much, only he does not tell us outright that he was the one. Again, in the story of Lazarus, Mary says to him, "Lord, behold he whom thou lovest is sick." From this we learn that Jesus loved particularly the brother, Lazarus. It was so well known, that Mary did not hesitate to speak of her brother in that way—"he whom thou lovest." The very thought of it thrills my heart through and through. Sometimes when I have been pleading for Christ, especially when I at first dreaded to undertake the task, *after* I have finished there has come a feeling that Jesus loves me ; and these thoughts or thrills are some of the very most precious things in all my religious experience. Mary simply said that he whom Jesus loved was sick. She did not add any thing further. We read further in that story that Jesus paid but little attention, apparently, to the message. He did not go immediately, as she had a right to expect he would ; neither did he say the word, and command that Lazarus should be made well. We do not know God's plans, neither do we know why he allows suffering and sickness ; but we *may* know that he hears and remembers, especially those whom he loves.

Years ago I heard a revival minister tell of

an old colored man who used to pray, when his enemies tried him severely, something after this fashion : "Lord, your property is in danger. Come and look after it." There was a sort of assurance in this old colored man's mind—we might almost call it audacity—for thinking that God regarded *him* as his property. Recently in a very trying experience, when I felt a good deal at sea as to what I ought to do, I remembered this illustration, and I breathed an inward prayer something like it. There came to me at once a sense of relief. It seemed as though the great Father above heard it and answered it : "Yes, dear child, you *are* my property. I will keep you from the snares of the evil one." After that there was a peaceful feeling of rest and contentment that caused me to feel that I was in the hands of Him whom even the winds and the waves obey. I think that Christians sometimes need that assurance. It rests them, and prepares them for life's conflicts ; and they may have it if they are ready to put aside self and to let the spirit of Jesus rule. I like this new phrase that has come up—"What would Jesus do?" or, "I will promise to do as Jesus would do, as nearly as I can, to the best of my judgment and understanding." What a world this would be if we could meet and deal with people who are united for a purpose or on a common platform and living such a life as this ! Some time ago I was in a home where the father and a son, the latter almost man grown, did not get along well together. The boy was very much needed at home. In fact, there was more property and business than the father could well manage ; but, unfortunately, both father and son were considerably set in their ways. The father laughingly said that he feared the trouble was, the boy was so much of "a chip off the old block." The poor mother stood midway between them. She did all she could to be a *mediator*. She was loyal to the *husband* and also loyal to her *boy*, and yet *they* were widely apart. The boy left his home and went away off. I have had more or less talk with all three of the parties. I begged the father to put self aside and let Jesus rule ; but I do not think he felt quite ready to do so. The good mother would have gladly acquiesced in *my* remedy for the trouble (for *all* troubles), for she would do almost any thing to have her boy at home. I do not know whether the boy is ready as yet to do "as Jesus would do," as nearly as he can judge, or not ; but with his mother's help I think he could be easily persuaded.

Oh what a beautiful and lovely home is that where Jesus rules and is over all ! Through him come harmony and peace and joy ; for where Jesus rules, Satan can not get in even a finger. We must accept him, as in the language of our text, as the Son of God. We must believe that God sent him as his messenger from heaven to earth, to heal all these troubles, and to bring peace and good will into every home. In fact, the very last words of the Old Testament are a prophecy to the effect that "he shall turn the heart of the fathers to the children, and the heart of the children to the fathers."

Temperance.

TEMPERANCE AND GOVERNMENT, OR TEMPERANCE IN GOVERNMENT.

The following editorial, which we clip from the *Cleveland Daily News and Herald*, is to me the best boiled-down temperance talk I ever heard in my life. It goes to the root of the matter without fear or favor, letting it hit where it may. See if you do not agree with me.

ORGANIZE, AND STOP THE DISGRACE.

Civilization becomes the agent of the Devil when it goes into a country inhabited by "heathen," with a sword in one hand and a whisky-bottle in the other.

England, as ex-President Harrison would say, has been looking for "consumers" for several centuries. Slaves, opium, and rum are some of the products which England has dealt in. China was debauched so that traders might make great fortunes in the sale of opium. Ships loaded with beer and whisky followed the American army to the Philippine Islands.

The United States has no right in morals, or, so far as we can see, in law, to engage in the liquor business. Yet we are told by Senators from the floor of Congress that this government has licensed hundreds of saloons in the city of Manila. If this is so the government should be compelled to revoke those licenses by the enraged public sentiment of the people of this Christian country.

Americans do not want, and they will not tolerate, drunken armies led by drunken officers. Nor will the mothers and the fathers in America permit the government, which their sons are fighting for in far distant lands, to destroy those sons with beer and whisky—Filipino bullets are deadly enough.

Men and women who love their country, and who are unwilling to see the further degradation of the Filipinos under the American flag, no matter whether the Constitution has followed the flag or not, should organize and bombard Washington so furiously and persistently as to compel the authorities to put a stop to the liquor traffic in Manila and elsewhere on the islands.

The Senators from Ohio, Messrs. Foraker and Hanna, are powerful men. They know how to carry elections, to influence public sentiment, and to persuade public authorities. Let them both be plainly told what the people of Ohio want them to do—what the people of Ohio demand that they shall do. They will not decline to act; they would hardly dare to decline even were they averse to taking a fresh burden upon themselves. Let the people, men and women, of other States organize for vigorous, tireless, and intelligent action. Let the authorities in Washington feel the pressure of an outraged and disquieted public sentiment.

The Anti-Saloon League in Ohio and the great Women's Christian Temperance Union, as well as all good citizens should enlist for the war. The Filipino war is small and unimportant compared with the "commercialism" which debauches the young American soldiers as well as the "heathens" whom these patriotic soldiers are attempting to civilize at the point of the bayonet. If expansion, the hunt for consumers for American products, means to barter in the souls and bodies of young men and Malay savages, the sooner this country begins to contract the better.

The issue is live and pressing. Everywhere in this country the people should act. Delegations of strong, able men should be sent to Washington from every city and village in the whole country. Republicans and Democrats should stand shoulder to shoulder. Compel public men to take their stand upon one side or the other. Drive this government out of the liquor business. Take the whisky-bottle out of the hand of civilization. Give to the Filipinos that benevolent assimilation which does not first make them drunk.

Now, dear brother or sister, if the above strikes you as it does me, give the editor who had the courage to write it such support and encouragement as he deserves. Subscribe for his paper, either daily or weekly. Show this temperance editorial to your friends; and if you want more copies of it, write me and I will furnish you free of charge, postpaid, as many as anybody will distribute to his friends, or where it will be read.

Special Notices by A. I. Root.

CAULIFLOWER SEED—H. A. MARCH'S LATEST AND BEST—THE MATTITUCK ERFURT.

For years past we have been furnishing H. A. March's strain of Snowball cauliflower seed. The best evidence of its good qualities and reliability is the increased orders from year to year, and the fact that so many of our old customers will not take any other. Well, friend March has just got out something that he thinks is an improvement on the Snowball. Here is what he says in regard to it:

Mr. Root:—I send you to-day 5 lbs. of selected Early Jersey Wakefield cabbage seed; also 1 lb. of cauliflower seed. I am willing to wager my reputation as a cauliflower-seed raiser that it is the very best pound of cauliflower seed in America to-day. Every seed, with good care, will make a head. At the head of this sheet is a photo of six of them piled up against a wheelbarrow turned up edgewise. You can see what they are like. Those six heads, trimmed as you see them, brought the scales down at 60 lbs. You may recommend the seed with perfect confidence. It heads with Snowball, but larger. Here in our moist climate the leaves cover the heads so well that there is no need of tying up. We call it the Mattituck Erfurt. The stock seed was imported from Erfurt three years ago, through a man at Mattituck, L. I., at a cost of \$8.00 per ounce.

H. A. MARCH.



SIX HEADS OF MARCH'S CAULIFLOWER.

'The pound of seed referred to in the above will be sold, while it lasts, at the regular price of the Snowball; viz., packet, 5 cts.; $\frac{1}{4}$ ounce, 25 cts.; $\frac{1}{8}$ ounce, 40 cts.; 1 ounce, \$1.50.

Early cauliflower brings tremendous prices; therefore it is a good plan to start a few plants right away. March's strain of Early Jersey Wakefield cabbage is also equally well known. The 5 lbs. referred to above will be sold in 5-cent packets; per ounce, 20 cts.; per lb., \$2.50. The cabbage is so very hardy that it is a good plan to have some of the seed put in right away. You can transplant them into cold-frames, and get them almost ready to head up before they go into the open ground, thus getting ahead of anybody else on early cabbage.

GRAND RAPIDS LETTUCE SEED—THE IMPORTANCE OF HAVING THE VERY BEST.

Some time ago, while discussing this matter of the best strains of seed, Eugene Davis, the originator of the Grand Rapids lettuce, sent me by request a small quantity of the best seed he could grow or procure. He also sent a small quantity to Thomas Slack, who writes as follows in regard to it:

I was just fortunate enough to have sown a section in the greenhouse last year with Davis' seed, as I was short of plants. A good many seeds did not come up until last spring, when the ground was dry, so I saved every one and set them out for seed, first seed (\$100.00 per lb.) would not buy it until I grow more. You can not understand how differently we feel this winter from last—hardly a spotted plant in the whole house, and each section turning out 35 to 40 boxes of first-class stuff instead of 15 to 20 boxes of very poor stuff as it did last winter. Price is 50 cents instead of 25. If you want a little seed to grow seed from in the spring, I think I can spare you a little. No charge, but it is not for sale.

Waterloo, Quebec, Dec. 27.

THOS. SLACK.

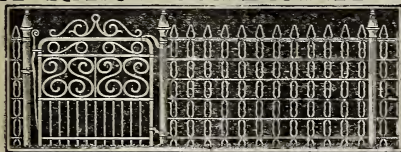
Now, friends, it does seem too bad that either friend Davis, Thomas Slack, who writes the above, or your humble servant A. I. Root, can not, one or all of them, personally superintend growing some choice Grand Rapids lettuce seed. Let's see—we shall have to call

it "Gilt-edged stock seed." The California-grown seed which we have been selling for a year past is far in advance of most of that on the market; but still it is not up to what we have just been writing and talking about, seed saved from carefully selected heads or plants. Eugene Davis has none to spare, and friend Slack says in closing that what little he has *is not for sale*. We have about 2 ounces left, sent us by Mr. Davis; and while it lasts we will let those have it, who wish, in five cent packets, putting only a few seeds in each. When you order, just say you want a packet of that "gilt-edged stock seed." You can, from this little packet, grow quite a good lot of seed during the coming year. As friend Slack seems to know better than anybody else exactly what is wanted, I suggest that he go right to work and grow seed enough so he can offer it for sale next fall.

A VISIT TO FLORIDA.

Providence permitting, some time during the month of February I shall make a hurried trip to Florida; and those of our readers who would like to have me make a brief call on them can drop me a postal. I can not promise to see all of you, but I will arrange my trip so as to take in as many as possible. I am planning to start about Feb. 1.—A. I. R.

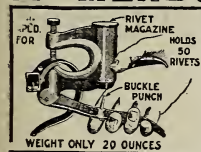
A RARE COMBINATION



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Dairy and Creamery—the "different" dairy paper—devoted to money making dairying, not theories. Send for free sample copy. We want agents for quick selling novelties. Write for terms. You can make big money. Agreeable work. DRAPER PUB. & SUPPLY CO., CHICAGO, ILLINOIS.

Strawberry-plants.

I have a large supply of Lady Thompson, Excelsior, and Crescent plants. A limited supply of Bismarck, Clyde, Barton's Eclipse, Brunette, Gertrude, Brandywine, Wm. Belt, Bubach, Haverland, Gandy, and Warfield, \$2.00 per 1000, f. o. b. here, or 70 cts. per 100, postpaid. Satisfaction guaranteed.

J. P. LEA, Fayetteville, Arkansas.

WANTED.—A competent man to start and manage an apiary, that can soon be developed into some 500 colonies; every convenience; no apiary near; 2 miles from Jacksonville P. O. Plenty of bee-trees. Only a few colored people have hives.

H. TURNER, Matthews, Duval Co., Fla.

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